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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,078	11/17/2003	Kinhing P. Tsang	STL11381	3300
7590 04/11/2005 Seagate Technology LLC 1280 Disc Drive Shakopee, MN 55379			EXAMINER WAMSLEY, PATRICK G	
			ART UNIT 2819	PAPER NUMBER

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,078

Applicant(s)

TSANG, KINHING P.

Examiner

Patrick G. Wamsley

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-28 is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/23/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

Only three sheets of drawings, comprising Figure 1-3, were filed on 11/17/2003. However, the specification, also filed on 11/17/2003, describes Figure 4, on lines 26-29 of page 4, and Figure 5, on lines 1-3 of page 5. Applicant should supply the two missing figures as the invention cannot be properly evaluated without them.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the adaptation of the DCF encoder [claims 2-7], the adaptation of the parity encoder [claims 8-19], the adaptation of the RLL encoder [claim 23], the decoder [claim 24] must be shown or canceled from claims 2-19, 23, and 24. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: -- Generation of Interleaved Parity Code Words Having Limited Running Digital Sum Values --.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Allowable Subject Matter

Claims 1-28 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the references of record neither reveal nor render obvious the recited combination including generation of a DC-free, hereafter DCF, code word on the basis of both input data and a pre-existing running digital sum, hereafter RDS, having a new RDS limited by a maximum threshold, and generation of an interleaved parity code word on the basis of the DCF code word.

Conclusion

This application is in condition for allowance except for the following formal matters:

- 1) Applicant should provide the two missing drawing figures.
- 2) Applicant should provide drawings to illustrate claim features not shown in Figures 1-3.
- 3) Applicant should provide a more descriptive title.


Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Art Unit: 2819

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,795,947 to Siegel et al discloses a parity check encoder [abstract, line 2] having an interleaver [abstract, line 3]. U.S. Patent 6,696,991 to Shim et al provides a method of suppressing a DC component in a codestream. U.S. Patent 6,631,490 to Shimoda couples a RLL encoder [3] to a parity encoder [4]. U.S. Patent 6,604,219 to Lee et al describes a DC control technique involving RDS evaluation. U.S. Patent 6,603,412 to Gatherer et al describes an interleaved coder. U.S. Patent 6,067,656 to Rusu et al presents a parity encoder [103]. U.S. Patent 5,958,081 to Lemense et al describes a parity encoder [20].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick G. Wamsley whose telephone number is (571) 272-1814. The official facsimile number is (703) 872-9306. An alternate facsimile number, (571) 273-1814, should only be used for unofficial documents.


Patrick G. Wamsley
April 6, 2005